of space is given to nitrifying bacteria in two chapters by different authors without a justifying difference of point of view.

Although only a small part of the book could be covered in one year if accompanied by the desirable amount of experimental work, no divisions indicate an intention to adapt the book progressively to different years, or to take account of the presence in the curriculum of the well-established sciences. The chapter on plant life attempts the rather dubious task of compressing into twenty-nine pages a survey of all botany, both physiological and morphological, from protophytes up. Two pages are given to flower structure and six to plant-breeding. Incidentally the terms "fertilization" and "pollination" seem to be used interchangeably. On one page the ovules are said to be fertilized; on the next it is the pistil that is fertilized. Surely if the student has had no botany before he needs more than is here provided, while if he has had a good course in the subject valuable space is wasted in presenting such a fragmentary treatment. In the generally excellent treatment of economic insects, from the standpoint of high-school use, the brief introduction seems to assume no previous zoölogy. The student should get somewhere a better conception of the zoölogical setting of insects, and of other groups as well, than is afforded in this book. On the other hand, the chapter on manures and fertilizing materials frankly presupposes some chemistry, a subject occurring in the curriculum later, usually, than botany or zoölogy. The same may be said of other material furnished by the editor.

The strong tendencies in secondary-school agriculture point to the need of a book or series departing more radically than does this from conventional lines. Pedagogical treatment should be held to be equal in importance with the facts stated.

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*Elementary Modern Chemistry.* By WILHELM OSTWALD and HARRY W. MORSE. Boston: Ginn & Co., 1909. Pp. xi+291. $1.00.

In their preface, the authors of this compact little book state that they have planned to present a sufficient number of facts and experiments to fill the time usually devoted to a first course, and at the same time have endeavored to fit these facts, as far as possible, to the simpler of the general laws now firmly established as the basis of the science of chemistry. Among the selected facts and experiments themselves one cannot expect to find any great divergence from the practice of many modern school texts. There are many simple diagrams, and these, in the main, are excellent; one exception, however, is that on p. 158, which shows a remarkably clear nitrate ring instead of a disc.

As might be anticipated, any abnormality that this book exhibits is on the side of theory and philosophical presentation of the facts. "A body which is studied with reference to its specific properties is called a substance" (p. 2). "Any solid whatever can be changed into a liquid if its temperature is raised to a high enough point" (p. 6). "A chemical reaction takes place more rapidly the higher the temperature" (p. 20). "Aluminium has all the properties common to metals except weight" (p. 27). These and other statements occurring later indicate that, to be used successfully, this book must be in the hands of a good teacher. But the errors are few, and the book is well produced. It may certainly be said that there are many books in the field which this one could with advantage displace.